

(FILE 'HOME' ENTERED AT 16:57:48 ON 09 JUL 2003)

FILE 'BIOSIS, CAPLUS, EMBASE, MEDLINE, CANCERLIT, JAPIO' ENTERED AT
16:58:08 ON 09 JUL 2003

updated search
Keywords
L/cook
7/9/03

L1 13 S DIGOXIN AND BIOTIN AND BIS?
L2 9 S L1 AND ANTIBOD?
L3 4 S L2 AND CHEM?
L4 4 DUPLICATE REMOVE L3 (0 DUPLICATES REMOVED)

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(B)

L13 ANSWER 8 OF 8 MEDLINE
 AN 94197071 MEDLINE
 DN 94197071 PubMed ID: 8147276
 TI Use of drug-specific **antibodies** to identify ethidium adducts produced in *Trypanosoma brucei* by photoaffinity labeling.
 AU Omholt P E; Cox B A; Prine L C; Byrd S; Yielding L W; Yielding K L
 CS Department of Human Biological Chemistry and Genetics, University of Texas Medical Branch, Galveston 77550.
 NC AI17700 (NIAID)
 SO ACTA TROPICA, (1993 Dec) 55 (4) 191-204.
 Journal code: 0370374. ISSN: 0001-706X.
 CY Netherlands
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 199405
 ED Entered STN: 19940511
 Last Updated on STN: 19940511
 Entered Medline: 19940504
 AB A photoreactive azido analog of the trypanocide ethidium bromide, 3-amino-8-azido-5-ethyl-6-phenylphenanthridinium chloride, attached covalently to calf thymus DNA (CT DNA) by photoaffinity labeling, was used to generate **antibodies** for the **drug analog**.
 The specificity of the antiserum was tested using **enzyme-linked** immunoabsorbant assays (ELISA) against immobilized antigen (photoaffinity labeled DNA) and by both the avidin-biotin peroxidase reaction and indirect immunofluorescence performed on smears of drug treated trypanosomes. The reaction of the antiserum with the covalently bound drug adduct was diminished effectively by prior incubation with an excess of ethidium monoazide, ethidium diazide, and ethidium bromide, and to a lesser extent by the DNA-ethidium complex, the diazide-DNA or RNA adduct, and the monoazide-RNA adduct. DNA which had been photoaffinity labeled with either the propidium or the acridine moiety did not react. The antiserum recognition of DNA photoaffinity labeled with ethidium monoazide was based on the substituted phenanthridinium ring system of the parent ethidium, as evidenced by competition binding studies involving the free monoazido analog (EA1), the diazido analog (EA2), and the parent compound, ethidium bromide (EB). This approach and the sensitivity it provides should prove useful for identifying the distribution and fate of covalently bound drugs resulting from antiparasitic drug treatment, and for studying their roles in antiparasitic action.
 CT Check Tags: Animal; Support, U.S. Gov't, P.H.S.
 Affinity Labels
 Antibodies
 Antibody Specificity
 Cattle
 *DNA: ME, metabolism
 Enzyme-Linked Immunosorbent Assay: MT, methods
 Ethidium: IM, immunology
 *Ethidium: ME, metabolism
 Fluorescent Antibody Technique
 Immunoenzyme Techniques
 Sensitivity and Specificity
 *Trypanosoma brucei brucei: ME, metabolism
 RN 3546-21-2 (Ethidium); 9007-49-2 (DNA)
 CN 0 (Affinity Labels); 0 (Antibodies)

microfilm
 Q3. A25

=>

=> s digoxin and biotin and bis?
L1 13 DIGOXIN AND BIOTIN AND BIS?

=> s l1 and antibod?
L2 9 L1 AND ANTIBOD?

=> s l2 and chem?
L3 4 L2 AND CHEM?

=> duplicate remove l3
PROCESSING COMPLETED FOR L3
L4 4 DUPLICATE REMOVE L3 (0 DUPLICATES REMOVED)

=> d l4 1-4 all

L4 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2003 ACS
AN 2001:677069 CAPLUS
DN 135:238969
TI Preparation and use of carriers coated with polysaccharides
IN Kirakossian, Hrair; Pease, John S.; Schelp, Carsten; Pirio, Marcel R.;
Stohr, Uwe; Wiegand, Andreas
PA Dade Behring Inc., USA
SO PCT Int. Appl., 71 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM G01N033-548
ICS G01N033-543
CC 9-16 (Biochemical Methods)
Section cross-reference(s): 1, 2, 15, 64

*applicant
date no good*

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001067105	A1	20010913	WO 2000-US5978	20000306
	W: CA, JP, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 1264181	A1	20021211	EP 2000-919371	20000306
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY				

PRAI WO 2000-US5978 W 20000306

AB A polysaccharide coated carrier having a coating of at least two successive layers of polysaccharide is described. The first polysaccharide layer spontaneously assoc. with a second polysaccharide layer and, optionally, the carrier. Each successive layer of polysaccharide spontaneously assoc. with a preceding layer. Spontaneous assocn. occurs due to the presence of oppositely charged functional groups on each layer of polysaccharide or due to a spontaneous reaction between the functional groups the layers. The carrier may be any surface such as a tube, microtitration plate, bead, particle or the like and is suitable for use in diagnostic or therapeutic methods. For example, **chemiluminescent** carboxylate beads (Seradyn) were coated with aminodextran and dextran aldehyde and labeled with anti-**digoxin** or anti-TSH **antibodies**. These anti-**digoxin** and anti-TSH **antibody** labeled **chemiluminescent** beads were tested for their performances in LOCI assays. The higher **antibody** concn. during the labeling resulted in **chemibead-antibody** reagent with better performance in the TSH LOCI assay.

ST polysaccharide carrier coating **chemiluminescence** fluorescence; diagnosis cancer **antibody** polysaccharide carrier coating

IT Proteins, specific or class

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)

(Ig-binding; prepn. of carriers coated with polysaccharides for diagnostics or pharmaceutical anal.)

IT Spheres
(beads; prepn. of carriers coated with polysaccharides for diagnostics or pharmaceutical anal.)

IT **Antibodies**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(biotinylated; prepn. of carriers coated with polysaccharides for diagnostics or pharmaceutical anal.)

IT Diagnosis
(cancer; prepn. of carriers coated with polysaccharides for diagnostics or pharmaceutical anal.)

IT Analysis
(clin.; prepn. of carriers coated with polysaccharides for diagnostics or pharmaceutical anal.)

IT Neoplasm
(diagnosis; prepn. of carriers coated with polysaccharides for diagnostics or pharmaceutical anal.)

IT Proteins, specific or class
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(oligonucleotide-binding; prepn. of carriers coated with polysaccharides for diagnostics or pharmaceutical anal.)

IT Microtitration
(plates, strips and sheets; prepn. of carriers coated with polysaccharides for diagnostics or pharmaceutical anal.)

IT Blood analysis
Ceramics
Diagnosis
Dyes
Fluorescence
Luminescence, **chemiluminescence**
Magnetic materials
Particle size
Particles
Pharmaceutical analysis
Pipes and Tubes
(prepn. of carriers coated with polysaccharides for diagnostics or pharmaceutical anal.)

IT Peptides, analysis
Prostate-specific antigen
RL: ANT (Analyte); ANST (Analytical study)
(prepn. of carriers coated with polysaccharides for diagnostics or pharmaceutical anal.)

IT Agglutinins and Lectins
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(prepn. of carriers coated with polysaccharides for diagnostics or pharmaceutical anal.)

IT Antigens
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(prepn. of carriers coated with polysaccharides for diagnostics or pharmaceutical anal.)

IT Avidins
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(prepn. of carriers coated with polysaccharides for diagnostics or pharmaceutical anal.)

IT Haptens
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(prepn. of carriers coated with polysaccharides for diagnostics or pharmaceutical anal.)

IT Ligands
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)

(prepn. of carriers coated with polysaccharides for diagnostics or pharmaceutical anal.)

IT Oligonucleotides
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (prepn. of carriers coated with polysaccharides for diagnostics or pharmaceutical anal.)

IT Receptors
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (prepn. of carriers coated with polysaccharides for diagnostics or pharmaceutical anal.)

IT **Antibodies**
 RL: ARG (Analytical reagent use); RCT (Reactant); ANST (Analytical study);
 RACT (Reactant or reagent); USES (Uses)
 (prepn. of carriers coated with polysaccharides for diagnostics or pharmaceutical anal.)

IT Biopolymers
 Glass, analysis
 Metals, analysis
 Polyamides, analysis
 Polyesters, analysis
 Polymers, analysis
 Polysaccharides, analysis
 Polysiloxanes, analysis
 RL: ARU (Analytical role, unclassified); ANST (Analytical study)
 (prepn. of carriers coated with polysaccharides for diagnostics or pharmaceutical anal.)

IT Radionuclides, uses
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (radiolabels; prep. of carriers coated with polysaccharides for diagnostics or pharmaceutical anal.)

IT Proteins, specific or class
 RL: ANT (Analyte); ANST (Analytical study)
 (recombinant; prep. of carriers coated with polysaccharides for diagnostics or pharmaceutical anal.)

IT Polyesters, analysis
 RL: ARU (Analytical role, unclassified); ANST (Analytical study)
 (vinyl group-contg.; prep. of carriers coated with polysaccharides for diagnostics or pharmaceutical anal.)

IT 9004-54-0P, Dextran, analysis
 RL: ARU (Analytical role, unclassified); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); RACT (Reactant or reagent)
 (carboxyethyl ethers; prep. of carriers coated with polysaccharides for diagnostics or pharmaceutical anal.)

IT 9002-71-5, Thyrotropin 20830-75-5, **Digoxin**
 RL: ANT (Analyte); ANST (Analytical study)
 (prepn. of carriers coated with polysaccharides for diagnostics or pharmaceutical anal.)

IT 9013-20-1, Streptavidin 41105-36-6, 2-Chloro-9,10-**bis**
 (phenylethynyl) anthracene
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (prepn. of carriers coated with polysaccharides for diagnostics or pharmaceutical anal.)

IT 58-85-5, **Biotin**
 RL: ARG (Analytical reagent use); RCT (Reactant); ANST (Analytical study);
 RACT (Reactant or reagent); USES (Uses)
 (prepn. of carriers coated with polysaccharides for diagnostics or pharmaceutical anal.)

IT 18843-92-0DP, reaction with silicon tetra(t-Bu phthalocyanine)
 RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
 (prepn. of carriers coated with polysaccharides for diagnostics or pharmaceutical anal.)

pharmaceutical anal.)

IT 1344-28-1, Alumina, analysis 7487-88-9, Magnesium sulfate, analysis 7631-86-9, Silica, analysis 9002-86-2, Polyvinyl chloride 9002-88-4, Polyethylene 9003-01-4, Poly(acrylic acid) 9003-05-8, Polyacrylamide 9003-07-0, Polypropylene 9003-29-6D, Poly(butene), derivs. 9003-53-6, Polystyrene 9004-34-6, Cellulose, analysis 9004-35-7, Cellulose acetate 9004-70-0, Nitrocellulose 9012-36-6, Agarose 24991-31-9, Polyvinylbutyrate 25038-59-9, Polyethyleneterephthalate, analysis 25087-26-7, Poly(methacrylic acid) 141733-17-7, Seradyn

RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(prepn. of carriers coated with polysaccharides for diagnostics or pharmaceutical anal.)

IT 9004-54-ODP, Dextran, aldehyde derivs., analysis 37293-51-9P, Aminodextran 50813-36-0P 359875-92-6P

RL: ARU (Analytical role, unclassified); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation)
(prepn. of carriers coated with polysaccharides for diagnostics or pharmaceutical anal.)

IT 58-85-5D, **Biotin**, derivs. 79-06-1, Acrylamide, reactions 106-40-1, 4-Bromoaniline 106-89-8, reactions 106-92-3, Allyl glycidyl ether 112-71-0, 1-Bromotetradecane 3634-67-1 5455-98-1, N-(2,3-Epoxypropyl)phthalimide 7087-68-5, N,N-Diisopropylethylamine 10026-04-7, Silicon tetrachloride 32703-80-3, 4-tert-Butyl-1,2-dicyanobenzene

RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of carriers coated with polysaccharides for diagnostics or pharmaceutical anal.)

IT 3468-11-9P, 1,3-Diiminoisoindoline 7440-21-3DP, Silicon, reaction with tetra(tert-Bu phthalocyanine), preparation 55025-11-1DP, Tetra(tert-butyl phthalocyanine), reaction with silicon

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of carriers coated with polysaccharides for diagnostics or pharmaceutical anal.)

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Burshteyn, A; US 5466609 A 1995 CAPLUS
- (2) Burshteyn, A; US 5776706 A 1998 CAPLUS
- (3) Coulter Corp; WO 9409368 A 1994 CAPLUS
- (4) Dade Behring Inc; WO 9930160 A 1999 CAPLUS
- (5) Irsch, J; US 5786161 A 1998 CAPLUS
- (6) Lawaczek, R; WO 9604017 A 1996 CAPLUS
- (7) Ullman, E; PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF USA 1994, V91, P5426 CAPLUS

L4 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2003 ACS

AN 2001:814004 CAPLUS

DN 135:341136

TI Preparation of luminescent-doped inorganic nanoparticles and usage as labels for biomolecule probes

IN Hoheisel, Werner; Petry, Christoph; Bohmann, Kerstin; Haase, Markus; Riwozki, Karsten

PA Bayer A.-G., Germany

SO Ger. Offen., 12 pp.

CODEN: GWXXBX

DT Patent

LA German

IC ICM G01N033-52

ICS G01N033-58; C12Q001-00; C12Q001-68

CC 9-1 (Biochemical Methods)

Section cross-reference(s): 73

FAN.CNT 1

date no good

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 10106643	A1	20011108	DE 2001-10106643	20010212
	WO 2001086299	A2	20011115	WO 2001-EP4545	20010423
	WO 2001086299	A3	20020523		
	W:				
	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,				
	CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM,				
	HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS,				
	LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO,				
	RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ,				
	VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,				
	DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,				
	BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	EP 1282824	A2	20030212	EP 2001-931636	20010423
	R:				
	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,				
	IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
PRAI	DE 2000-10021674	A1	20000505		
	DE 2001-10106643	A	20010212		
	WO 2001-EP4545	W	20010423		
AB	The invention concerns luminescent-doped inorg. nanoparticles that are used as labels for affinity mols. e.g. nucleic acids, antibodies , proteins, etc.; affinity mols. are directly attached to the nanoparticles or via linker groups, e.g. thiols, amines, imidazoles, mol. self-assemblies, etc. Thus europium-doped phosphoric acid, lanthanum(3+) salt (1:1) was prepd. by a previously described wet chem. method; the obtained milky dispersion was centrifuged, dialyzed and dried to obtain the desired particle size. The LaPO ₄ :Eu nanoparticles were coated with silica using a basic sodium water glass soln.; sepd. by ethanol pptn., centrifugation, ultrasound dispersion, decanting and drying. The silica coated nanoparticles were amine-activated with 3-aminopropyltriethoxysilane and treated with sulfosuccinimidyl 4-(N-maleimidomethyl)cyclohexane-1-carboxylate (sulfo-SMCC) crosslinker. Antibodies to .alpha.-actin were thiol-activated in a 2-iminothiolane soln. and incubated with the treated luminescent-doped inorg. nanoparticles; the obtained luminescent probes were used to visualize actin filaments in rabbit muscles by confocal laser scanning microscopy.				
ST	luminescent doped inorg nanoparticle biomol probe fluorescence microscopy				
IT	Ketones, uses				
	RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses) (1,2-diketones; prepn. of luminescent-doped inorg. nanoparticles and usage as labels for biomol. probes)				
IT	Luminescence				
	(UV; prepn. of luminescent-doped inorg. nanoparticles and usage as labels for biomol. probes)				
IT	Surfactants				
	(anionic; prepn. of luminescent-doped inorg. nanoparticles and usage as labels for biomol. probes)				
IT	Heterocyclic compounds				
	RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses) (azolides; prepn. of luminescent-doped inorg. nanoparticles and usage as labels for biomol. probes)				
IT	Surfactants				
	(cationic; prepn. of luminescent-doped inorg. nanoparticles and usage as labels for biomol. probes)				
IT	Rare earth metals, uses				
	RL: ARG (Analytical reagent use); MOA (Modifier or additive use); ANST (Analytical study); USES (Uses) (dopant; prepn. of luminescent-doped inorg. nanoparticles and usage as labels for biomol. probes)				
IT	Phosphates, uses				

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (doped with Ce,Tb,of a lanthanide or their mixt.; prepn. of
 luminescent-doped inorg. nanoparticles and usage as labels for biomol.
 probes)

IT Imidic acids
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (esters; prepn. of luminescent-doped inorg. nanoparticles and usage as
 labels for biomol. probes)

IT Group IIIA element compounds
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (gallates; prepn. of luminescent-doped inorg. nanoparticles and usage
 as labels for biomol. probes)

IT Radioluminescence
 (gamma-ray; prepn. of luminescent-doped inorg. nanoparticles and usage
 as labels for biomol. probes)

IT Group IVA element compounds
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (germanates; prepn. of luminescent-doped inorg. nanoparticles and usage
 as labels for biomol. probes)

IT Phosphates, uses
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (halide; prepn. of luminescent-doped inorg. nanoparticles and usage as
 labels for biomol. probes)

IT Immunoassay
 (luminescence; prepn. of luminescent-doped inorg. nanoparticles and
 usage as labels for biomol. probes)

IT Group VB element compounds
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (niobates; prepn. of luminescent-doped inorg. nanoparticles and usage
 as labels for biomol. probes)

IT Heterocyclic compounds
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (nitrogen, five-membered, imidazoles; prepn. of luminescent-doped
 inorg. nanoparticles and usage as labels for biomol. probes)

IT Sulfides, uses
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (oxy; prepn. of luminescent-doped inorg. nanoparticles and usage as
 labels for biomol. probes)

IT Halides
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (phosphates; prepn. of luminescent-doped inorg. nanoparticles and usage
 as labels for biomol. probes)

IT Amines, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (polyamines, nonpolymeric; prepn. of luminescent-doped inorg.
 nanoparticles and usage as labels for biomol. probes)

IT Carboxylic acids, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (polycarboxylic; prepn. of luminescent-doped inorg. nanoparticles and
 usage as labels for biomol. probes)

IT Animal tissue
 Biochemical molecules
 Blood analysis
 Blood plasma
 Blood serum
 Cathodoluminescence
 Cerebrospinal fluid
 Dopants
 Fluorescence microscopy
 Fluorescent substances
 Fluorometry
 Immobilization, biochemical

Light sources
 Luminescence spectroscopy
 Luminescent substances
 Nanoparticles
 Nucleic acid hybridization
 Particle size
 Plant tissue
 Plasmids
 Self-assembly
 Sputum
 Sulfhydryl group
 Urine analysis
 X-ray luminescence
 (prepn. of luminescent-doped inorg. nanoparticles and usage as labels
 for biomol. probes)

IT Alkali metal halides, uses
 Anhydrides
 Arsenates
 Aryl halides
 Borates
 Haptens
 Isothiocyanates
 Molybdates
 Oxides (inorganic), uses
 Peptides, uses
 Phosphates, uses
 Polysaccharides, uses
 Selenides
 Silicates, uses
 Sulfates, uses
 Sulfides, uses
 Sulfonyl halides
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (prepn. of luminescent-doped inorg. nanoparticles and usage as labels
 for biomol. probes)

IT **Antibodies**
 Nucleic acids
 Probes (nucleic acid)
 Proteins, general, uses
 Thiols (organic), uses
 RL: ARG (Analytical reagent use); PEP (Physical, engineering or chemical
 process); ANST (Analytical study); PROC (Process); USES (Uses)
 (prepn. of luminescent-doped inorg. nanoparticles and usage as labels
 for biomol. probes)

IT Amines, reactions
 Polysulfones, reactions
 Thioethers
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (prepn. of luminescent-doped inorg. nanoparticles and usage as labels
 for biomol. probes)

IT Diazonium compounds
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (salts; prepn. of luminescent-doped inorg. nanoparticles and usage as
 labels for biomol. probes)

IT Selenides
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (sulfo; prepn. of luminescent-doped inorg. nanoparticles and usage as
 labels for biomol. probes)

IT Group VB element compounds
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (tantalates; prepn. of luminescent-doped inorg. nanoparticles and usage
 as labels for biomol. probes)

IT **Antibodies**
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (to .alpha.-actin; prepn. of luminescent-doped inorg. nanoparticles and
 usage as labels for biomol. probes)

IT Group VIB element compounds
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (tungstates; prepn. of luminescent-doped inorg. nanoparticles and usage
 as labels for biomol. probes)

IT Carbonyl compounds (organic), uses
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (unsatd.; prepn. of luminescent-doped inorg. nanoparticles and usage as
 labels for biomol. probes)

IT Group VB element compounds
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (vanadates; prepn. of luminescent-doped inorg. nanoparticles and usage
 as labels for biomol. probes)

IT Surfactants
 (zwitterionic; prepn. of luminescent-doped inorg. nanoparticles and
 usage as labels for biomol. probes)

IT Actins
 RL: ANT (Analyte); ANST (Analytical study)
 (.alpha.-; prepn. of luminescent-doped inorg. nanoparticles and usage
 as labels for biomol. probes)

IT 1314-98-3, Zinc sulfide (ZnS), uses
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (Ag, Al, Cu, Mn, Tb, TbF₃, Eu, EuF₃, lanthanide doped; prepn. of
 luminescent-doped inorg. nanoparticles and usage as labels for biomol.
 probes)

IT 82992-94-7, Calcium strontium sulfide ((Ca,Sr)S)
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (Bi-doped; prepn. of luminescent-doped inorg. nanoparticles and usage
 as labels for biomol. probes)

IT 145564-56-3, Calcium magnesium silicate ((Ca,Mg)(SiO₃))
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (Ce or Ti doped; prepn. of luminescent-doped inorg. nanoparticles and
 usage as labels for biomol. probes)

IT 150927-51-8, Aluminum cerium magnesium terbium oxide
 (Al₁₁Ce_{0.65}MgTb_{0.35}O₁₉) 186956-28-5, Aluminum magnesium oxide
 (Al₁₁MgO₁₉)
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (Ce, Tb doped; prepn. of luminescent-doped inorg. nanoparticles and
 usage as labels for biomol. probes)

IT 35361-71-8, Aluminum lithium strontium fluoride (AlLiSrF₆) 35362-46-0
 371759-79-4, Aluminum calcium oxide silicate (Al₂Ca₂O(SiO₃)₂)
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (Ce-doped; prepn. of luminescent-doped inorg. nanoparticles and usage
 as labels for biomol. probes)

IT 12442-27-2, Cadmium zinc sulfide ((Cd,Zn)S)
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (Cu, Al, Ag, Ni doped; prepn. of luminescent-doped inorg. nanoparticles
 and usage as labels for biomol. probes)

IT 12024-21-4, Gallium oxide (Ga₂O₃)
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (Dy-doped; prepn. of luminescent-doped inorg. nanoparticles and usage
 as labels for biomol. probes)

IT 21669-04-5, Barium bromide fluoride (BaBrF) 122656-71-7, Barium bromide
 chloride fluoride (BaBr_{0.5}Cl_{0.5}F)
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (Eu doped; prepn. of luminescent-doped inorg. nanoparticles and usage
 as labels for biomol. probes)

IT 13718-55-3, Barium chloride fluoride (BaClF)
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)

(Eu or Sm doped; prepn. of luminescent-doped inorg. nanoparticles and usage as labels for biomol. probes)

IT 1344-28-1, Alumina, uses 10377-51-2, Lithium iodide (LiI) 12254-04-5, Aluminum barium magnesium oxide (Al₁₀BaMgO₁₇) 12505-97-4, Boron strontium fluoride oxide (B₁₂Sr₃F₂O₂₀) 37276-56-5, Calcium strontium chloride phosphate (CaSr₉Cl₂(PO₄)₆) 55134-50-4, Aluminum barium magnesium oxide (Al₁₆BaMg₂O₂₇) 71012-47-0, Aluminum barium magnesium oxide (Al₁₄BaMgO₂₃) 115968-61-1, Vanadium yttrium oxide phosphate (VO-1YO₀-4(PO₄)₀-1) 119537-26-7, Calcium magnesium sulfide ((Ca,Mg)S) 350480-93-2, Magnesium strontium metaphosphate oxide ((Mg,Sr)₂(PO₃)₂O) 371759-66-9, Aluminum barium magnesium oxide (Al₂BaMgO₃) 371759-80-7

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(Eu-doped; prepn. of luminescent-doped inorg. nanoparticles and usage as labels for biomol. probes)

IT 13597-65-4, Zinc silicate (Zn₂SiO₄)
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(Mn or As-doped; prepn. of luminescent-doped inorg. nanoparticles and usage as labels for biomol. probes)

IT 7789-75-5, Calcium fluoride (CaF₂), uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(Mn or Dy doped; prepn. of luminescent-doped inorg. nanoparticles and usage as labels for biomol. probes)

IT 7778-18-9, Calcium sulfate (CaSO₄)
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(Mn or lanthanide doped; prepn. of luminescent-doped inorg. nanoparticles and usage as labels for biomol. probes)

IT 10101-39-0
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(Mn, Pb, lanthanide doped; prepn. of luminescent-doped inorg. nanoparticles and usage as labels for biomol. probes)

IT 7779-90-0, Zinc phosphate (Zn₃(PO₄)₂) 12007-60-2, Lithium borate (Li₂B₄O₇) 12159-91-0, Germanium magnesium fluoride oxide (Ge₂Mg₈F₂₀Il) 12255-72-0, Magnesium arsenate oxide (Mg₆(AsO₄)₂O₃) 13776-74-4, Magnesium metasilicate (MgSiO₃) 28042-61-7, Magnesium potassium fluoride (MgKF₃) 126344-47-6, Magnesium zinc fluoride ((Mg,Zn)F₂) 371759-74-9, Beryllium zinc oxide sulfide (BeZn₄O₄S) 371759-78-3, Cadmium borate oxide (Cd(BO₃)O)
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(Mn-doped; prepn. of luminescent-doped inorg. nanoparticles and usage as labels for biomol. probes)

IT 1306-23-6, Cadmium sulfide, uses
RL: ARG (Analytical reagent use); MOA (Modifier or additive use); ANST (Analytical study); USES (Uses)
(Mn-doped; prepn. of luminescent-doped inorg. nanoparticles and usage as labels for biomol. probes)

IT 12143-49-6, Tantalum yttrium oxide (TaYO₄)
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(Nb-doped; prepn. of luminescent-doped inorg. nanoparticles and usage as labels for biomol. probes)

IT 7790-75-2, Calcium tungstate (CaWO₄)
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(Pb or Sm doped; prepn. of luminescent-doped inorg. nanoparticles and usage as labels for biomol. probes)

IT 13573-11-0, Magnesium tungstate (MgWO₄)
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(Pb or Sm-doped; prepn. of luminescent-doped inorg. nanoparticles and usage as labels for biomol. probes)

IT 13968-67-7, Barium silicate (BaSi₂O₅) 200212-20-0, Barium magnesium zinc oxide silicate ((Ba,Mg,Zn)₃O(SiO₃)₂)
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(Pb-doped; prepn. of luminescent-doped inorg. nanoparticles and usage as labels for biomol. probes)

IT 33846-79-6, Barium yttrium fluoride (BaY2F8)
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (Pr, Tm, Er, Ce doped; prepn. of luminescent-doped inorg. nanoparticles
 and usage as labels for biomol. probes)

IT 75535-31-8, Calcium chloride fluoride phosphate (Ca5(Cl,F)(PO4)3)
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (Sb, Mn doped; prepn. of luminescent-doped inorg. nanoparticles and
 usage as labels for biomol. probes)

IT 106804-21-1, Magnesium strontium phosphate ((Mg,Sr)3(PO4)2)
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (Sn-doped; prepn. of luminescent-doped inorg. nanoparticles and usage
 as labels for biomol. probes)

IT 12031-43-5, Lanthanum oxide sulfide (La2O2S) 13875-40-6, Lanthanum
 bromide oxide (LaBrO)
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (Tb doped; prepn. of luminescent-doped inorg. nanoparticles and usage
 as labels for biomol. probes)

IT 13466-21-2, Barium pyrophosphate (Ba2P2O7)
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (Ti-doped; prepn. of luminescent-doped inorg. nanoparticles and usage
 as labels for biomol. probes)

IT 7789-17-5, Cesium iodide (CsI)
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (Tl-doped or sodium-doped; prepn. of luminescent-doped inorg.
 nanoparticles and usage as labels for biomol. probes)

IT 7681-82-5, Sodium iodide (NaI), uses
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (Tl-doped; prepn. of luminescent-doped inorg. nanoparticles and usage
 as labels for biomol. probes)

IT 1314-13-2, Zinc oxide (ZnO), uses
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (Zn,Si,Ga doped; prepn. of luminescent-doped inorg. nanoparticles and
 usage as labels for biomol. probes)

IT 7429-90-5, Aluminum, uses 7429-91-6, Dysprosium, uses 7439-92-1, Lead,
 uses 7439-96-5, Manganese, uses 7440-00-8, Neodymium, uses
 7440-02-0, Nickel, uses 7440-03-1, Niobium, uses 7440-10-0,
 Praseodymium, uses 7440-19-9, Samarium, uses 7440-21-3, Silicon, uses
 7440-22-4, Silver, uses 7440-28-0, Thallium, uses 7440-30-4, Thulium,
 uses 7440-31-5, Tin, uses 7440-32-6, Titanium, uses 7440-36-0,
 Antimony, uses 7440-38-2, Arsenic, uses 7440-45-1, Cerium, uses
 7440-47-3, Chromium, uses 7440-48-4, Cobalt, uses 7440-50-8, Copper,
 uses 7440-52-0, Erbium, uses 7440-53-1, Europium, uses 7440-55-3,
 Gallium, uses 7440-64-4, Ytterbium, uses 7440-66-6, Zinc, uses
 7440-69-9, **Bismuth**, uses 7440-74-6, Indium, uses
 RL: ARG (Analytical reagent use); MOA (Modifier or additive use); ANST
 (Analytical study); USES (Uses)
 (dopant; prepn. of luminescent-doped inorg. nanoparticles and usage as
 labels for biomol. probes)

IT 76125-60-5, Aluminum strontium oxide (Al14Sr4O25)
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (doped Eu; prepn. of luminescent-doped inorg. nanoparticles and usage
 as labels for biomol. probes)

IT 75529-26-9, Gadolinium magnesium borate (GdMgB5O10)
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (doped with Ce, Tb; prepn. of luminescent-doped inorg. nanoparticles
 and usage as labels for biomol. probes)

IT 7631-86-9, Silicon dioxide, uses
 RL: ARG (Analytical reagent use); MOA (Modifier or additive use); ANST
 (Analytical study); USES (Uses)
 (doped with Dy, Al; prepn. of luminescent-doped inorg. nanoparticles
 and usage as labels for biomol. probes)

IT 113671-38-8, Silicon oxide (SiO0-2)

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(doped with Er, Al; prepn. of luminescent-doped inorg. nanoparticles
and usage as labels for biomol. probes)

IT 31387-71-0, Barium ytterbium fluoride (BaYb₂F₈)
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(doped with Er; prepn. of luminescent-doped inorg. nanoparticles and
usage as labels for biomol. probes)

IT 12027-88-2, Yttrium silicate (Y₂SiO₅) 12340-04-4, Yttrium oxide sulfide
(Y₂O₂S)
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(doped with Eu or other lanthanide; prepn. of luminescent-doped inorg.
nanoparticles and usage as labels for biomol. probes)

IT 12032-36-9, Magnesium sulfide (MgS)
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(doped with Eu, Ce, Sm or combination; prepn. of luminescent-doped
inorg. nanoparticles and usage as labels for biomol. probes)

IT 13778-59-1, Lanthanum phosphate (LaPO₄)
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(doped with Eu, Ce, Tb, Dy, Nd; prepn. of luminescent-doped inorg.
nanoparticles and usage as labels for biomol. probes)

IT 13566-12-6, Vanadium yttrium oxide (VYO₄)
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(doped with Eu, Sm, Dy, In; prepn. of luminescent-doped inorg.
nanoparticles and usage as labels for biomol. probes)

IT 1314-36-9, Yttrium oxide (Y₂O₃), uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(doped with Eu, Tb or other lanthanide; prepn. of luminescent-doped
inorg. nanoparticles and usage as labels for biomol. probes)

IT 13568-56-4, Lutetium vanadium oxide (LuVO₄) 13628-52-9, Gadolinium
vanadium oxide (GdVO₄) 124676-67-1, Gadolinium yttrium borate
((Gd,Y)(BO₃)) 230313-54-9, Gallium yttrium borate ((Ga,Y)(BO₃))
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(doped with Eu; prepn. of luminescent-doped inorg. nanoparticles and
usage as labels for biomol. probes)

IT 7789-24-4, Lithium fluoride (LiF), uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(doped with Mg, Ti, Na or their combination; prepn. of
luminescent-doped inorg. nanoparticles and usage as labels for biomol.
probes)

IT 7783-40-6, Magnesium fluoride (MgF₂)
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(doped with Mn or lanthanide; prepn. of luminescent-doped inorg.
nanoparticles and usage as labels for biomol. probes)

IT 13709-38-1, Lanthanum fluoride (LaF₃)
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(doped with Nd, Ce, Yb, Er, Tm; prepn. of luminescent-doped inorg.
nanoparticles and usage as labels for biomol. probes)

IT 12031-63-9, Lithium niobate (LiNbO₃)
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(doped with Nd, Yb, Er; prepn. of luminescent-doped inorg.
nanoparticles and usage as labels for biomol. probes)

IT 371759-81-8, Aluminum yttrium borate oxide (Al₃Y(BO₃)₃O₃)
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(doped with Nd, Yb; prepn. of luminescent-doped inorg. nanoparticles
and usage as labels for biomol. probes)

IT 69142-81-0, Gadolinium strontium silicate (Gd₂Sr₃Si₆O₁₈)
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(doped with Pb,Mn; prepn. of luminescent-doped inorg. nanoparticles and
usage as labels for biomol. probes)

IT 25617-97-4, Gallium nitride (GaN)
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(doped with Pr, Eu, Er, Tm; prepn. of luminescent-doped inorg.

nanoparticles and usage as labels for biomol. probes)

IT 12003-86-0, Aluminum yttrium oxide (AlYO3) 26916-94-9, Lithium lutetium fluoride (LiLuF4)
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (doped with Pr, Tm, Er, Ce; prepn. of luminescent-doped inorg. nanoparticles and usage as labels for biomol. probes)

IT 1314-96-1, Strontium sulfide (SrS)
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (doped with Sm, Ce, Eu, Ag, Cu; prepn. of luminescent-doped inorg. nanoparticles and usage as labels for biomol. probes)

IT 13812-81-2, Strontium pyrophosphate (Sr2P2O7)
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (doped with Sn or Eu; prepn. of luminescent-doped inorg. nanoparticles and usage as labels for biomol. probes)

IT 371759-82-9, Aluminum gallium yttrium oxide (Al3Ga2Y2O12)
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (doped with Tb; prepn. of luminescent-doped inorg. nanoparticles and usage as labels for biomol. probes)

IT 13759-29-0, Yttrium chloride oxide (YClO) 14118-26-4, Lanthanum sodium fluoride (LaNaF4) 14118-34-4, Sodium yttrium fluoride (NaYF4) 15640-94-5, Gadolinium sodium fluoride (GdNaF4) 26874-36-2, Barium yttrium fluoride (BaYF5)
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (doped with Yb, Er; prepn. of luminescent-doped inorg. nanoparticles and usage as labels for biomol. probes)

IT 13709-49-4, Yttrium fluoride (YF3)
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (doped with Yb, Er, lanthanide; prepn. of luminescent-doped inorg. nanoparticles and usage as labels for biomol. probes)

IT 12592-70-0, Gallium strontium sulfide (Ga2SrS4)
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (doped with lanthanide, Pb; prepn. of luminescent-doped inorg. nanoparticles and usage as labels for biomol. probes)

IT 12005-21-9, Aluminum yttrium oxide (Al5Y3O12) 23108-36-3, Lithium yttrium fluoride (LiYF4)
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (doped with lanthanide; prepn. of luminescent-doped inorg. nanoparticles and usage as labels for biomol. probes)

IT 1305-78-8, Calcium oxide, uses
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (doped with lanthanides; prepn. of luminescent-doped inorg. nanoparticles and usage as labels for biomol. probes)

IT 12339-07-0, Gadolinium oxide sulfide (Gd2O2S)
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (doped with tb; prepn. of luminescent-doped inorg. nanoparticles and usage as labels for biomol. probes)

IT 20548-54-3, Calcium sulfide (CaS)
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (lanthanide or Bi doped; prepn. of luminescent-doped inorg. nanoparticles and usage as labels for biomol. probes)

IT 58-85-5, **Biotin** 503-68-4D, Diazoacetic acid, deriv. 541-59-3D, Maleimide, deriv. 661-20-1D, Isocyanate, deriv. 7439-97-6D, Mercury, org. deriv., uses 11098-82-1, Aluminate 12233-56-6, **Bismuth** germanate (Bi4Ge3O12) 20830-75-5, **Digoxin** 144419-68-1, Aluminum barium cerium magnesium oxide (Al11(Ba,Mg)CeO19)
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (prepn. of luminescent-doped inorg. nanoparticles and usage as labels for biomol. probes)

IT 113-00-8, Guanidine 120-72-9D, Indole, derivs. 1344-09-8, Water glass 6539-14-6, 2-Iminothiolane 64987-85-5
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (prepn. of luminescent-doped inorg. nanoparticles and usage as labels

for biomol. probes)
 IT 13708-63-9, Terbium fluoride (TbF3) 13765-25-8, Europium fluoride (EuF3)
 RL: ARG (Analytical reagent use); MOA (Modifier or additive use); ANST
 (Analytical study); USES (Uses)
 (with ZnS; prepn. of luminescent-doped inorg. nanoparticles and usage
 as labels for biomol. probes)
 IT 7440-27-9, Terbium, uses
 RL: ARG (Analytical reagent use); MOA (Modifier or additive use); ANST
 (Analytical study); USES (Uses)
 (with mixed oxides; prepn. of luminescent-doped inorg. nanoparticles
 and usage as labels for biomol. probes)

L4 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2003 ACS

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TI **Bis-biotin** compounds for specific binding assays

IN Pirio, Marcel Rene; Davalian, Dariush; Ishkanian, Jacqueline Sadakan;
 Ullman, Edwin F.

PA Dade Behring Inc., USA

SO PCT Int. Appl., 70 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM G01N033-532

ICS G01N033-78; G01N033-74

CC 9-14 (Biochemical Methods)

Section cross-reference(s): 1, 26

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	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9960400	A1	19991125	WO 1999-US10960	19990519
	W: JP				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 6153442	A	20001128	US 1998-81873	19980520
	EP 1005650	A1	20000607	EP 1999-923193	19990519
	R: CH, DE, ES, FR, GB, IT, LI, NL, SE				
	JP 2002516252	T2	20020604	JP 2000-549961	19990519
PRAI	US 1998-81873	A	19980520		
	WO 1999-US10960	W	19990519		

AB The present invention relates to compds. that are **bis-biotins**. These compds. comprise two biotinyl radicals connected by a chain of atoms, usually at least 16 atoms in length. The **bis-biotin** is conjugated to a member of a specific binding pair ("sbp member") wherein the chain is not part of the sbp member. Also disclosed are compns. comprising a complex of avidin and a **bis-biotin** as described above. The compds. and compns. of the invention find use in an assay for an analyte wherein there is employed a reagent system comprising an avidin reagent and a **biotin** reagent. The improvement of the present invention comprises using as the **biotin** reagent a **bis-biotin** as described above. Also disclosed are kits comprising the present **bis-biotins** and methods of prepg. a **bis-biotinylated** conjugate of a member of a specific binding pair ("sbp member") for use in a specific binding assay. A **bis-biotin** conjugate with **digoxin** was prepd. and complexed with sensitizer beads having immobilized streptavidin. The beads were used in a **chemiluminescence** immunoassay for **digoxin**.

ST **bisbiotin** conjugate specific binding assay; **biotin bis** conjugate; **digoxin chemiluminescence** immunoassay **bisbiotin** conjugate

IT Carboxyl group

*pull
opponent*

Hydroxyl group
 (biotin attaching group functionality of; **bis-biotin** compds. for specific binding assays)

IT Thiocyanates
 Thiols (organic), properties
 RL: PRP (Properties)
 (biotin attaching group functionality of; **bis-biotin** compds. for specific binding assays)

IT Blood analysis
 Electrochemical analysis
 Spectroscopy
 Test kits
 (**bis-biotin** compds. for specific binding assays)

IT Antigens
 Haptens
 Polynucleotides
 Receptors
 RL: ANT (Analyte); ANST (Analytical study)
 (**bis-biotin** compds. for specific binding assays)

IT Amino group
 Sulfhydryl group
 (**bis-biotin** reactive with, of proteins; **bis-biotin** compds. for specific binding assays)

IT Proteins, general, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (**bis-biotin** reactive with; **bis-biotin** compds. for specific binding assays)

IT Latex
 (carboxylate-modified beads of, reaction of, in prepn. of **antibody**-bound **chemiluminescer** beads for immunoassays; **bis-biotin** compds. for specific binding assays)

IT Immunoassay
 (**chemiluminescence**; **bis-biotin** compds. for specific binding assays)

IT Avidins
 RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
 (complexes, with **bis-biotin**; **bis-biotin** compds. for specific binding assays)

IT Antigens
 Haptens
 Polynucleotides
 Receptors
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
 (conjugates, with **bis-biotin**; **bis-biotin** compds. for specific binding assays)

IT Functional groups
 (iminocarbonyl, specific binding pair member attached through, to chain linking **biotin** groups; **bis-biotin** compds. for specific binding assays)

IT Avidins
 RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); DEV (Device component use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
 (immobilized; **bis-biotin** compds. for specific binding assays)

IT **Antibodies**
 RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
 (monoclonal, labeled, with **chemiluminescer** beads, for

immunoassays; **bis-biotin** compds. for specific binding assays)

IT **Antibodies**
 RL: ARG (Analytical reagent use); BPN (Biosynthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
 (monoclonal; **bis-biotin** compds. for specific binding assays)

IT Functional groups
 (phosphate esters, specific binding pair member attached through, to chain linking **biotin** groups; **bis-biotin** compds. for specific binding assays)

IT Amines, properties
 RL: PRP (Properties)
 (primary, **biotin** attaching group functionality of; **bis-biotin** compds. for specific binding assays)

IT Amines, properties
 RL: PRP (Properties)
 (secondary, **biotin** attaching group functionality of; **bis-biotin** compds. for specific binding assays)

IT Analysis
 (specific binding assays; **bis-biotin** compds. for specific binding assays)

IT Carbonyl group
 (specific binding pair member attached through, to chain linking **biotin** groups; **bis-biotin** compds. for specific binding assays)

IT Amines, properties
 Ethers, properties
 Sulfonamides
 Thioethers
 RL: PRP (Properties)
 (specific binding pair member attached through, to chain linking **biotin** groups; **bis-biotin** compds. for specific binding assays)

IT 60-35-5D, Acetamide, halo derivs., properties
 RL: PRP (Properties)
 (**biotin** attaching group functionality of; **bis-biotin** compds. for specific binding assays)

IT 9013-20-1D, Streptavidin, complexes with **bis-biotin**
 RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
 (**bis-biotin** compds. for specific binding assays)

IT 50-28-2DP, Estradiol, **bisbiotinylated**, complexes with streptavidin-sensitizer beads 9003-53-6DP, Polystyrene, modified with silicon tetra-t-Bu phthalocyanine and streptavidin, **bis(biotin)** conjugate complexes 35924-94-8DP, **Bis-biotin**, compds., conjugates 79217-60-0DP, Cyclosporin, **bisbiotinylated**, complexes with streptavidin-sensitizer beads
 RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
 (**bis-biotin** compds. for specific binding assays)

IT 3634-67-1
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (**bis-biotin** compds. for specific binding assays)

IT 193027-49-5P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (**bis-biotin** compds. for specific binding assays)

IT 50-28-2, Estradiol, analysis 51-48-9, Thyroxine, analysis 20830-75-5, **Digoxin** 79217-60-0, Cyclosporin
 RL: ANT (Analyte); ANST (Analytical study)

(chemiluminescence immunoassay for; bis-biotin compds. for specific binding assays)

IT 251096-25-ODP, complexes with streptavidin-sensitizer beads
 RL: ARG (Analytical reagent use); PRP (Properties); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
 (for digoxin assay, stability of; bis-biotin compds. for specific binding assays)

IT 251096-26-1DP, complexes with streptavidin-sensitizer beads
 RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
 (for thyroxine assay; bis-biotin compds. for specific binding assays)

IT 60-24-2 66-71-7, 1,10-Phenanthroline 106-40-1, 4-Bromoaniline 112-71-0, 1-Bromotetradecane 14054-87-6
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (in prepn. of antibody-bound chemiluminescer beads for immunoassays; bis-biotin compds. for specific binding assays)

IT 17904-86-8P 192937-52-3P 192937-53-4P 199116-59-1P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (in prepn. of antibody-bound chemiluminescer beads for immunoassays; bis-biotin compds. for specific binding assays)

IT 251096-25-0P
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (in prepn. of digoxin assay reagent; bis-biotin compds. for specific binding assays)

IT 58-85-5 99-33-2, 3,5-Dinitrobenzoylchloride 501-53-1, Benzylchloroformate 660-88-8, 5-Aminovaleric acid 929-59-9, 2,2'-(Ethylene dioxy)bis(ethylamine 6066-82-6, N-Hydroxysuccinimide 10026-04-7, Silicon tetrachloride 24424-99-5, Di-tert-butyl dicarbonate 32703-80-3, 4-tert-Butyl-1,2-dicyanobenzene 129273-26-3
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (in prepn. of digoxin assay reagent; bis-biotin compds. for specific binding assays)

IT 3468-11-9P, 1,3-Diiminoisoindoline 23135-50-4P 35013-72-0P 76523-73-4P 153086-78-3P 216502-73-7P 251096-20-5P 251096-21-6P 251096-23-8P 251096-24-9P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (in prepn. of digoxin assay reagent; bis-biotin compds. for specific binding assays)

IT 26041-51-0, N-Acetylthyroxine
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (in prepn. of thyroxine assay reagent; bis-biotin compds. for specific binding assays)

IT 75937-15-4P 251096-26-1DP, complexes with streptavidin-sensitizer beads
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (in prepn. of thyroxine assay reagent; bis-biotin compds. for specific binding assays)

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE

- (1) Erasmus, H; US 5219764 A 1993 CAPLUS
- (2) Green, N; Biochemical Journal 1971, V125(3), P781 CAPLUS
- (3) Luppia, P; Bioconjugate Chemistry 1994, V5(2), P167 CAPLUS
- (4) Mares, A; Journal of Immunological Methods 1995, V183(2), P211 CAPLUS
- (5) Morgan, H; Journal of Polymer Science Polymer Chemistry Edition 1994, V32, P1331 CAPLUS

- (6) Morgan, H; Molecular Crystals and Liquid Crystals Science and Technology Section A Molecular Crystals and Liquid Crystals 1993, V235, P121 CAPLUS
- (7) Nutikka, A; Clinical Biochemistry 1991, V24(6), P469 CAPLUS
- (8) Oris SA; WO 9004791 A 1990 CAPLUS
- (9) Pierlot, C; Bioorganic and Medicinal Chemistry Letters 1992, V2(3), P267 CAPLUS
- (10) Toyobo Co Ltd; JP 06100586 A 1994 CAPLUS
- (11) Wilbur, D; Journal of Labelled Compounds and Radiopharmaceuticals 1997, V40, P335

L4 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2003 ACS

AN 1990:213569 CAPLUS

DN 112:213569

TI Tridentate conjugates for competitive immunoassays

IN Oh, Chan S.; Sternberg, James C.

PA Beckman Instruments, Inc., USA

SO Eur. Pat. Appl., 40 pp.

CODEN: EPXXDW

DT Patent

LA English

IC ICM G01N033-531

ICS G01N033-94; G01N033-532

CC 9-10 (Biochemical Methods)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 310361	A2	19890405	EP 1988-309002	19880929
	EP 310361	A3	19890524		
	R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	WO 8903041	A2	19890406	WO 1988-US3368	19880930
	WO 8903041	A3	19890420		
	W: AU, JP				
	RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE				
	AU 8826056	A1	19890418	AU 1988-26056	19880930
	AU 623352	B2	19920514		
	US 5168057	A	19921201	US 1991-768118	19910930
	JP 06222058	A2	19940812	JP 1992-225325	19920731
	JP 2627124	B2	19970702		
	US 5661019	A	19970826	US 1995-410014	19950322
	US 5851778	A	19981222	US 1997-832143	19970402
PRAI	US 1987-103093		19870930		
	WO 1988-US3368		19880930		
	US 1991-768118		19910930		
	US 1992-911827		19920710		
	US 1995-410014		19950322		

AB A tridentate conjugate for competitive immunoassays has 3 **chem.** moieties, or tridentate members, attached through an appropriate spacer moiety. At least 2 of the tridentate members are relatively small mols. (e.g. ligands haptens), usually .ltorsim.7000 daltons. The particular appropriate spacer moiety selected for a tridentate imparts certain steric properties to the tridentate conjugate. In 1 embodiment, the binding of a macromol. specific binding partner to one of the tridentate members sterically inhibits the binding of a different macromol. to another tridentate member. In another embodiment, the binding of a 1st tridentate member to a macromol. restricts the subsequent binding of a 2nd tridentate member to a proximate location on the same macromol. Thus, a **biotin**-theophylline-lysine conjugate (prepn. described) was reacted with DNP-**bis**(aminocaproic acid) N-hydroxysuccinimide ester (prepn. described) to form a **biotin**-theophylline-DNP conjugate. Theophylline amine (I) was detd. in a nephelometric inhibition immunoassay by mixing the conjugate with anti-theophylline monoclonal **antibody**, anti-DNP **antibody**, avidin, and samples contg.

the analyte. Free I competed with theophylline in the conjugate for the anti-theophylline monoclonal **antibody**. Increasing concns. of I resulted in an increased nephelometric signal.

ST hapten tridentate conjugate competitive immunoassay; **biotin** theophylline dinitrophenol conjugate immunoassay

IT Fluorescent substances
(conjugates with haptens and macromols., tridentate, for competitive immunoassays)

IT Antidepressants
(detn. of, by competitive immunoassay, tridentate conjugates for)

IT Haptens
Hormones
Proteins, analysis
Vitamins
RL: ANT (Analyte); ANST (Analytical study)
(detn. of, by competitive immunoassay, tridentate conjugates for)

IT Macromolecular compounds
RL: ANT (Analyte); ANST (Analytical study)
(detn. of, tridentate conjugates for)

IT **Antibodies**
RL: SPN (Synthetic preparation); PREP (Preparation)
(to dinitrophenol, conjugates with fluorescein, prepn. of, for competitive immunoassays)

IT Azides
RL: ANST (Analytical study)
(tridentate conjugates contg., for competitive immunoassays)

IT Pharmaceutical analysis
(tridentate hapten conjugates in, by competitive immunoassay)

IT Luminescent substances
(**chemi**-, conjugates with haptens and macromols., tridentate, for competitive immunoassays)

IT Immunochemical analysis
(**chemiluminescence** energy-transfer immunoassay, tridentate conjugates for, prepn. of)

IT Rare earth metals, compounds
RL: ANST (Analytical study)
(complexes, fluorescent proximity label, tridentate conjugates contg., for competitive immunoassays)

IT Porphyrins
RL: ANST (Analytical study)
(complexes, with tin or zinc, tridentate conjugates, for competitive immunoassays)

IT Ligands
RL: ANST (Analytical study)
(conjugated, tridentate, for competitive immunoassays)

IT Enzymes
RL: ANST (Analytical study)
(conjugates, with haptens and macromols., tridentate, for competitive immunoassays)

IT Proteins, specific or class
RL: ANST (Analytical study)
(conjugates, with haptens, tridentate, for competitive immunoassays)

IT Immunochemical analysis
(nephelometric inhibition immunoassay, tridentate conjugates for, prepn. of)

IT Nucleotides, polymers
RL: ANT (Analyte); ANST (Analytical study)
(oligo-, detn. of, by competitive immunoassay, tridentate conjugates for)

IT Nucleotides, polymers
RL: ANST (Analytical study)
(oligo-, conjugates, with haptens, tridentate, for competitive

immunoassays)

IT Avidins
 RL: ANST (Analytical study)
 (succinylated, conjugates, with thiolated hexokinase, for competitive immunoassays)

IT 5438-71-1, Theophylline-8-butyric acid
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (amination of, in conjugate prepn. for competitive immunoassay)

IT 6332-90-7 125905-11-5
 RL: ANST (Analytical study)
 (as spacer for tridentate conjugates for competitive immunoassays)

IT 50-06-6, Phenobarbital, analysis 50-78-2, Acetylsalicylic acid
 51-06-9, Procainamide 51-28-5, Dinitrophenol, analysis 56-54-2
 56-75-7, Chloramphenicol 57-27-2, Morphine, analysis 57-41-0,
 Phenytoin 58-55-9, analysis 59-05-2, Methotrexate 76-57-3, Codeine
 77-67-8, Ethosuximide 88-74-4D, 2-Nitroaniline, derivs. 99-66-1,
 Valproic acid 103-90-2 125-33-7, Primidone 137-58-6, Lidocaine
 525-66-6 554-84-7D, derivs. 561-27-3 1403-66-3, Gentamycin
 3737-09-5, Disopyramide 8063-07-8, Kanamycin 19410-53-8 20830-75-5,
Digoxin 32986-56-4, Tobramycin 56391-56-1
 RL: ANT (Analyte); ANST (Analytical study)
 (detn. of, by competitive immunoassay)

IT 81-88-9D, tridentate conjugates with haptens and macromols. 98-80-6D,
 Phenyl boronic acid, tridentate conjugates with haptens and macromols.
 1445-69-8D, tridentate conjugates with haptens and macromols.
 2321-07-5D, Fluorescein, tridentate conjugates with haptens and macromols.
 7440-31-5D, Tin, protoporphyrin complexes, tridentate conjugates with
 haptens and macromols. 7440-66-6D, Zinc, protoporphyrin complexes,
 tridentate conjugates with haptens and macromols. 9003-99-0D,
 Peroxidase, tridentate conjugates with haptens and macromols.
 109392-90-7D, tridentate conjugates with haptens and macromols.
 9001-37-0D, Glucose oxidase, tridentate conjugates with haptens and
 macromols. 9001-40-5D, Glucose-6-phosphate dehydrogenase, tridentate
 conjugates with haptens and macromols. 9001-51-8D, Hexokinase,
 tridentate conjugates with haptens and macromols.
 RL: ANST (Analytical study)
 (for competitive immunoassays)

IT 54718-62-6P 125884-01-7P 125905-09-1P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (prepn. and reaction of, in conjugate prepn. for competitive
 immunoassay)

IT 125884-02-8P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (prepn. and reaction of, in conjugate prepn. for competitive
 immunoassays)

IT 125884-03-9P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn. of)

IT 9001-51-8DP, Hexokinase, thiolated, conjugates with succinylavidin
 27072-45-3DP, Fluorescein isothiocyanate, **antibody** conjugates
 66612-29-1DP, isothiocyanate derivs., avidin conjugates 127067-75-8P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn. of, for competitive immunoassays)

IT 125884-04-0P 126379-67-7P 126454-98-6P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn. of, in conjugate prepn. for competitive immunoassay)

IT 126251-22-7P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn. of, in conjugate prepn. for competitive immunoassays)

IT 1155-64-2

RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with **biotin** succinimide ester)
 IT 14251-32-2
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with biotinylcarboboxylysine)
 IT 70-34-8, 2,4-Dinitrofluorobenzene
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with **his**(aminocaproate))
 IT 124-09-4, 1,6-Hexanediamine, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with bromotheophylline)
 IT 2014-58-6
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with dinitrofluorobenzene)
 IT 10381-75-6, 8-Bromotheophylline
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with hexanediamine)
 IT 35013-72-0, **Biotin** N-hydroxysuccinimide ester
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with theophylline deriv. in conjugate prepn. for
 competitive immunoassay)
 IT 125905-10-4
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with theophyllineaminohexylamine in conjugate prepn. for
 competitive immunoassay)

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